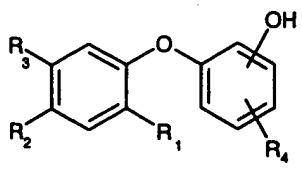
What is claimed is:

1. Use of hydroxydiphenyl ether compounds of the following formula

(1) 

wherein when OH is in the para position with respect to the ether linkage

R_1 and R_2 are independently of each other hydrogen, hydroxy, C_1-C_{20}alkyl, C_5-C_7cycloalkyl, C_1-C_6alkylcarbonyl, C_1-C_{20}alkoxy, phenyl or phenyl-C_1-C_3-alkyl;

R_3 is hydrogen, C_1-C_{20}alkyl or C_1-C_{20}alkoxy;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy substituted C_1-C_{20}alkyl, C_5-C_7cycloalkyl, hydroxy, formyl, acetonyl, C_1-C_6alkylcarbonyl, C_2-C_{20}alkenyl, carboxy, carboxyC_1-C_3alkyl, C_1-C_3alkylcarbonylC_1-C_3alkyl or carboxyallyl;

wherein when OH is in the meta position with respect to the ether linkage

R_2 is hydrogen, C_1-C_{20}alkyl, hydroxy substituted C_1-C_{20}alkyl or C_1-C_6alkylcarbonyl;

R_1 and R_3 are independently of each other hydrogen, C_1-C_6alkylcarbonyl or C_1-C_{20}alkyl;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy substituted C_1-C_{20}alkyl, C_5-C_7cycloalkyl, hydroxy, formyl, acetonyl, C_1-C_6alkylcarbonyl, C_2-C_{20}alkenyl, carboxy, carboxyC_1-C_3alkyl, C_1-C_3alkylcarbonylC_1-C_3alkyl or carboxyallyl;

wherein when OH is in the ortho position with respect to the ether linkage

R_1 is hydrogen, C_1-C_6alkyl carbonyl or C_1-C_{20}alkyl;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy substituted C_1-C_{20}alkyl, C_5-C_7cycloalkyl, hydroxy, formyl, acetonyl, C_1-C_6alkylcarbonyl, C_2-C_{20}alkenyl, carboxy, carboxyC_1-C_3alkyl, C_1-C_3alkylcarbonylC_1-C_3alkyl or carboxyallyl;

R_2 and R_3 are independently of each other hydrogen, C_1-C_6 alkyl carbonyl or C_1-C_{20} alkyl;

with the proviso that compounds wherein OH is in the para position with respect to the ether linkage and R_1 and R_3 are both hydrogen and R_2 is methoxy or methyl; or a compound wherein OH is in the para position with respect to the ether linkage R_2 is hydrogen, R_1 is isopropyl and R_3 is methyl are excluded;

as antimicrobial agents.

2. Use of the compounds according to claim 1 wherein in formula (1) when OH is in the para position with respect to the ether linkage

R_1 and R_2 are independently of each other hydrogen, C_1-C_{20}alkyl, C_1-C_6 alkyl carbonyl or C_1-C_{20}alkoxy;

R_3 is hydrogen, C_1-C_{20}alkyl or C_1-C_{20}alkoxy;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy, formyl, acetonyl, allyl, carboxymethyl, carboxyallyl, hydroxy substituted C_1-C_{20}alkyl or C_1-C_6 alkyl carbonyl;

wherein when OH is in the meta position with respect to the ether linkage

R_2 is hydrogen, C_1-C_{20}alkyl, hydroxy substituted C_1-C_{20}alkyl or C_1-C_6 alkyl carbonyl;

R_1 and R_3 are independently of each other hydrogen, C_1-C_6 alkyl carbonyl or C_1-C_{20}alkyl;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy, formyl, acetonyl, allyl, carboxymethyl, carboxyallyl, hydroxy substituted C_1-C_{20}alkyl or C_1-C_6 alkyl carbonyl;

wherein when OH is in the ortho position with respect to the ether linkage

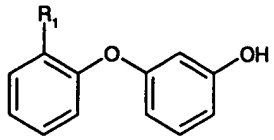
R_1 is hydrogen, C_1-C_6 alkyl carbonyl or C_1-C_{20}alkyl;

R_4 is hydrogen, C_1-C_{20}alkyl, hydroxy, formyl, acetonyl, allyl, carboxymethyl, carboxyallyl, hydroxy substituted C_1-C_{20}alkyl or C_1-C_6 alkyl carbonyl;

R_2 and R_3 are independently of each other hydrogen, C_1-C_6 alkyl carbonyl or C_1-C_{20}alkyl;

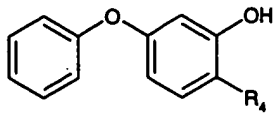
with the proviso that compounds wherein OH is in the para position with respect to the ether linkage and R_1 and R_3 are both hydrogen and R_2 is methoxy or methyl; or a compound wherein OH is in the para position with respect to the ether linkage R_2 is hydrogen, R_1 is iso-propyl and R_3 is methyl are excluded.

3. Use of the compounds of formula

(6)  according to claim 1, wherein

R_1 is C_1-C_5alkyl.

4. Use of the compounds of formula

(7)  ; wherein

R_4 is C_1-C_5alykl.

5. Use of the compounds according to one of claims 1 to 4 for finishing of undyed and dyed or printed fibre materials.

6. Use of the compounds according to one of claims 1 to 4 for the antimicrobial treatment of skin, mucous membrane or hair.

7.Use of the compounds according to one of claims 1 to 4 for the incorporation into and for the antimicrobial finishing of polymeric materials.

8. Use of the compounds according to one of claims 1 to 4 for the antimicrobial treatment of hard surfaces.

9. Use of the compounds according to one of claims 1 to 4 for the antimicrobial treatment of teeth and gums.

10. A personal care composition comprising at least one compound of formula (1) according to claim 1 and cosmetically tolerable carriers or auxiliaries.

11. An oral care composition comprising at least one compound of formula (1) according to claim 1.

12. A detergent composition comprising at least one compound of formula (1)) according to claim 1.

13. Compounds of formula (1) wherein OH is in the ortho position with respect to the ether linkage and R_2, R_3 and R_4 are hydrogen and R_1 is C_1-C_{20} alkyl.

14. Compounds of formula (1) wherein OH is in the meta position with respect to the ether linkage and R_2, R_3 and R_4 are hydrogen and R_1 is C_1-C_{20} alkyl.

15.Compounds of formula (1) wherein OH is in the para position with respect to the ether linkage and R_2 and R_4 are hydrogen and R_1 and R_3 are C_1-C_{20} alkyl.

16. A process for the preparation of compounds according to one of claims 13 to 15 comprising reacting a substituted phenol with an ether substituted halogenphenol in the presence of alkali and a catalytically active quantity of copper or of a copper compound, then heating the resulting alkyloxybenzol compound in the presence of hydrogen halide and acid.

17. Compounds of formula (1) wherein OH is in the ortho position with respect to the ether linkage and R_1, R_2 and R_3 are hydrogen and R_4 is in the meta position with respect to the ether linkage and is C_1-C_6 alkyl carbonyl.

18. Compounds of formula (1) wherein OH is in the meta position with respect to the ether linkage and R_1, R_2 and R_3 are hydrogen and R_4 is in the para position with respect to the ether linkage and is C_1-C_6alkyl carbonyl.

19. A process for the preparation of compounds according to claims 17 and 18 which comprises reacting an acyl chloride with a phenoxyphenol in the presence of activated zinc at a temperature of between 70°c to 80°C, then heating the resulting acyl compound at a temperature of 145°C to 150°C in the presence of aluminium chloride.

20. Compounds of formula (1) wherein OH is in the meta position with respect to the ether linkage and R_1, R_2 and R_3 are hydrogen and R_4 is in the para position with respect to the ether linkage and is C_1-C_{20}alkyl.

21. A process for the preparation of compounds according to claims 17 and 18 which comprises reacting an acyl chloride with a phenoxyphenol in the presence of activated zinc at a temperature of between 70°c to 80°C, then heating the resulting acyl compound at a temperature of 145°C to 150°C in the presence of aluminium chloride, then refluxing the resulting acylated phenol in the presence of amalgamated zinc, hydrochloric acid and a solvent such as toluene.